

What is claimed is:

1. A heater for an air conditioner using waste heat and high pressure refrigerant as heat sources for heating a room, the heater comprising:

a plurality of fluid tubes, in which a fluid heated by the waste heat flows, exposed in air to be blown into the room; and

a plurality of refrigerant tubes, in which the high-pressure refrigerant flows, exposed in air to be blown into the room,

wherein the fluid tubes and the refrigerant tubes are arranged in parallel in a flow direction of air to be blown into the room.

2. The heater according to claim 1, wherein the fluid tubes and the refrigerant tubes are alternately arranged in a line in an arrangement direction that is approximately perpendicular to the flow direction of air.

3. The heater according to claim 1, wherein the fluid tube and the refrigerant tube are arranged such that the fluid and the high-pressure refrigerant in adjacent the fluid tube and the refrigerant tube perform heat exchange therebetween.

4. The heater according to claim 1, wherein adjacent the fluid tube and the refrigerant tube are arranged to contact each other.

5. The heater according to claim 1, further comprising:

a fluid tank disposed at one longitudinal ends of the fluid tubes to communicate with the fluid tubes; and

a refrigerant tank disposed at one longitudinal ends of the refrigerant tubes to communicate with the refrigerant tubes, the refrigerant tank being positioned on the opposite side of the fluid tank with respect to the fluid tubes and the refrigerant tubes, wherein:

the fluid tubes are provided such that a fluid flow direction changes by approximately 180° in each of the fluid tubes on the opposite end of the fluid tank;

the refrigerant tubes are provided such that a refrigerant flow direction changes by approximately 180° in each of the refrigerant tubes on the opposite end of the refrigerant tank.

6. The heater according to claim 1, further comprising a plurality of fins each of which contacts the fluid tube and the refrigerant tube adjacent to the fins.

7. A heater for an air conditioner using waste heat and high pressure refrigerant as heat sources for heating a room, the heater comprising:

a fluid tube, in which a fluid heated by the waste heat flows, exposed in air to be blown into the room; and

a refrigerant tube, in which the high-pressure

refrigerant flows, exposed in air to be blown into the passenger compartment,

wherein the fluid tube and the refrigerant tube are arranged in a line in an arrangement direction approximately perpendicular to in a flow direction of air to be blown into the room.

8. An air conditioner using waste heat from a waste heat source unit and high-pressure refrigerant from a refrigerant cycle as heat sources for heating a room, the air conditioner comprising:

a casing for defining an air passage through which air flows toward the room;

a heater disposed in the air passage for heating air, the heater including:

a plurality of fluid tubes in which a fluid heated by the waste heat flows; and

a plurality of refrigerant tubes in which the high-pressure refrigerant flows, wherein:

the fluid tubes and the refrigerant tubes are arranged in a flow direction of air; and

when temperature of the fluid flowing out of the waste heat source unit is less than a predetermined temperature in a heating mode for heating air to be blown into the room, the high-pressure refrigerant is circulated in the refrigerant tubes.

9. The air conditioner according to claim 8, wherein, when the temperature of the fluid flowing out of the waste heat source unit is less than the predetermined temperature, a flow of the fluid from the waste heat source unit to the heater is stopped.

10. The air conditioner according to claim 8, wherein, when the temperature of the fluid flowing out of the waste heat source unit is less than the predetermined temperature, the fluid is circulated in the heater while the flow of the fluid from the waste heat source unit to the heater is stopped.